

WHO CARES ABOUT CITIZEN SCIENCE?

INITIAL RESULTS OF A SURVEY ON USES OF COASTAL AND MARINE CITIZEN SCIENCE DATA

Studies from around the world are accumulating on the topic of citizen science, many of which discuss the enormous potential benefits for environmental research, conservation policy and science 'literacy' in the public domain. The 'citizens' in citizen science might be students, Indigenous rangers, interested individuals or organised volunteer groups. The common thread is that they are amateurs in the field of environmental science and are keen to participate in the scientific process. What is currently missing in the literature (the body of work that supports the process of scientific inquiry) is in-depth discussions on actual uses of citizen science data – whether or not the data collected by amateurs is used for management, policy, compliance or other decision-making. The main purpose for distributing a survey was to determine whether citizen science is contributing to natural resource management (NRM) and policy development in Australia and to identify the major factors that influence the ability to provide and use data collected by citizens.

Distribution of the Survey

The survey was distributed through a number of networks to community groups (volunteers), NRM managers in non-government and government organisations and researchers throughout the country.

Initial Results

Some initial results are presented here, which were shared at the Coast to Coast Conference 2012 in Brisbane, Australia. I am continuing to look at the survey results in detail.

As I aim to publish this work, please do not cite or otherwise quote this work unless permission is received.

NB. All figures and results reflect responses up to 12/09/12 and are subject to change in final analysis and results

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Capacity of Volunteer Groups

Survey responses indicate citizen science monitoring efforts cover all states and territories of Australia. Activities range from photo documentation of dune erosion, measuring water quality in estuaries and counting sea turtle nests to recording coral bleaching events. A complete inventory is in progress to record these groups and activities.

Monitoring activities range from local scale to international, with the majority of programs operating at the regional scale (NRM-region based).



SNAPSHOT OF RESPONDENTS (CITIZEN SCIENCE DATA PROVIDERS)

73, mainly from volunteer networks and community organisations

44% motivated by desire to increase knowledge of local area or species

55% have been operating for 6 years or more

64% rely on funding and support from government and management agencies

The majority of respondents (44%) were motivated by learning more about a particular

species or location and 33% were responding to a potential environmental threat (eg. pollutants or invasive species). Only 8% of respondents were directly asked by an NRM agency or expert to participate in the monitoring activity.



Overwhelmingly, the major factor determining the collection and provision of data is the ability of the program to 'stay in business'

Factors that Affect Provision and Use of Citizen Science Data

What are the main factors that affect how citizen science data is collected, shared, stored and used?

The primary factor that determines the collection and provision of data is the ability of the program to 'stay in business': maintaining the financing and partnerships (64% of responses) on which the programs rely.

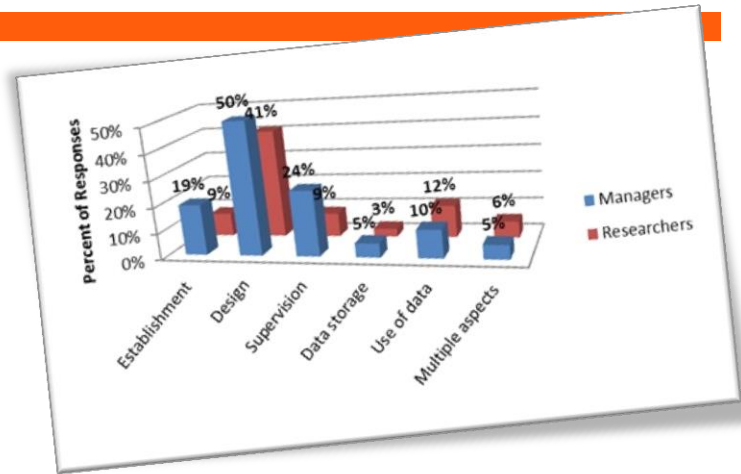
Data Users (natural resource managers and researchers) are most concerned with the quality of the data collected and the methods

employed by volunteers. Although survey responses indicate programs are using standardized methods and equipment and put effort into following monitoring protocols, managers and researchers would have greater confidence in the data if there were more quality assurance checks in place.

How do NRM managers and researchers engage with citizen science?

There is a relatively low degree of engagement overall by natural resource managers and researchers in citizen science programs. As the

majority of citizen science projects in Australia are not initiated by NRM agencies or other experts, (see *Capacity of Volunteer Groups*, page 2), volunteers could do more to engage managers and researchers in their programs. This might be achieved by inviting experts to sit on Technical or Steering Committees as advisors to the project, or by more directly engaging them in ongoing supervision and quality assurance processes. This may, in fact, have other flow-on effects of increasing



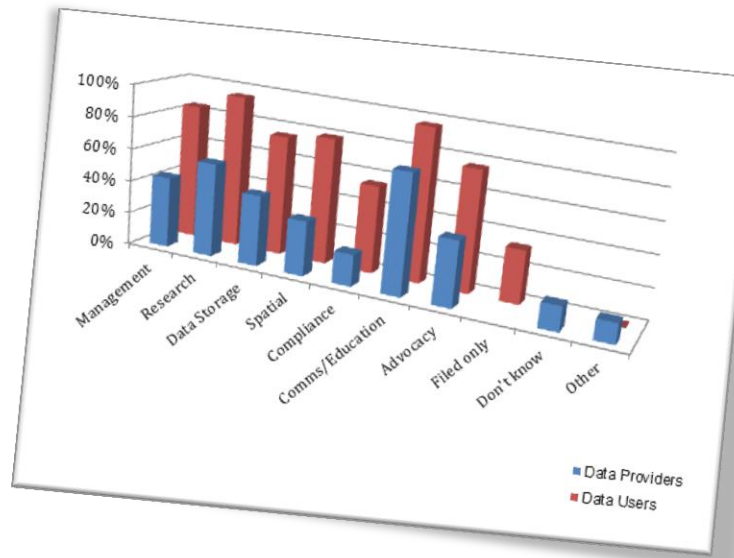
the uptake of data and encourage additional engagement in the project. More managers than researchers are engaged in various aspects of a citizen science project, perhaps due to their role in funding such programs.

Uses of Citizen Science Data

84% of respondents report they use citizen science data to make management, planning or policy decisions in Australia's coast and marine environments.

At the forefront of volunteer concerns is maintaining operations (Funding/Partnerships, Maintaining Numbers and Skills of Volunteers). Notwithstanding, given these concerns are addressed, responses suggest that citizen science is a viable option for ongoing decision making in Australia.

Increased communication between experts and volunteers will continue to ensure good outcomes for provision and use of data for NRM. Projects would benefit from expert advice on monitoring design and other QA aspects: engaging NRM professionals and researchers as advisors to the project will help bridge the gap between professional expectations of rigorous sampling and QA/QC procedures and their inclusion in the project design.



FOR MORE INFORMATION

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ACKNOWLEDGEMENTS

The author wishes to thank Sydney Metropolitan Catchment Management Authority and the Australian Geographic Society without which this study would not be possible. This study has been approved by the University of Technology, Sydney Human Research Ethics Committee, UTS HREC reference number 2012-052A.